

Remarks

Claims 7-10 are pending in this application. Claims 7-10 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over McKee, Ipcinski or Park in view of Muirhead, Wood or Ikrath. Applicants believe that there is no suggestion or motivation to modify the references to achieve the claimed invention. The Examiner states that to use the specific generator of McKee, Ipcinski or Park for use as a self contained wireless transmitter would have been obvious to one of ordinary skill in the art. This statement by the Examiner does not point out any teaching, suggestion, or motivation in the references to make the proposed combination. As such, the Examiner has failed to make a *prima facie* case of obviousness. Further, applicants provide additional explanation as to why there is no motivation or suggestion to modify the references below.

TD
Ikrath

Regarding Muirhead, this patent describes a radio frequency device for marking munition impact point. The transmitter activates on impact of the munition. Because the transmitter activates on impact of the munition, there is no motivation to provide a switch including a Bellville washer that distresses the piezoelectric element when manually actuated. Manual actuation of a switch including a Bellville washer is clearly undesirable in a munition that is designed to transmit upon impact with a target.

Regarding Ikrath, this patent describes a mechanically actuated radio transmitter. Mechanical spring 7 continues to vibrate and continues to strike the crystal after the initial hammer blow. Col. 2, ll. 6-28. There is no motivation to substitute a switch including a Bellville washer that upon manual actuation strikes the crystal a single time. Further, making such a modification would change the principle of operation of Ikrath in that the principle of operation of Ikrath requires mechanically vibrating spring element 7.

Regarding Wood, this patent describes a transmitter power supply for oscillators. Arm 28 is constructed of resilient material such as spring steel such that arm 28 vibrates and causes crystal 16 to generate voltages which appear as alternating charges (as arm 28 continues to vibrate). There is no motivation to provide a switch including a Bellville

washer that upon actuation provides a single impact to the crystal. Further, such a modification changes the principle of operation of Wood in that Wood requires arm 28 to vibrate.

In summary, applicants believe that the Examiner has failed to provide a suggestion or motivation to modify the references to achieve the claimed invention, and applicants believe that there is no suggestion or motivation to modify the references. Above, applicants give reasons why it is improper to modify Muirhead, Wood or Ikrath. Accordingly, claim 7 is believed to be patentable over the cited prior art.

Claims 8-10 are believed to be patentable for their dependency upon claim 7. In addition, the Examiner has failed to point out any specific teaching of the features recited by dependent claims 8 and 10 which are believed to recite additional patentable subject matter. Applicants respectfully request that the Examiner allow pending claims 7-10.

In addition, applicants filed an IDS on December 6, 2001 including a certificate of mailing under 37 C.F.R. § 1.8. It appears that the Examiner did not consider the IDS because an initialed copy of the cite list was not attached to the office action. A copy of the previously filed IDS is enclosed, and Applicants request that the Examiner consider the cited references and return an initialed copy of the cite list. Because the IDS was originally filed before the mailing date of the first office action with a certificate of mailing under 37 C.F.R. § 1.8, no fee is being enclosed. A copy of the original postcard with the OIPE received stamp is also enclosed.

Respectfully submitted,

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Attachment

VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the Specification:

In accordance with these and other objects, the present invention provides a twenty-year life, self-powered wireless switch for automobiles, aircraft (e.g., jet engines), elevators, and other applications requiring transmission of control signals/information from an inaccessible or rotating location. The self-powered wireless switch is provided with a wireless transmitter, and an energy harvesting device arranged to produce electrical power for operation of the wireless transmitter when actuated by a switch. In accordance with aspect of the present invention, the energy harvesting device includes a piezoelectric element arranged to be distressed upon actuation of the switch. In accordance with another aspect, the energy harvesting device can include a tritium lamp arranged to [energy] energize a phosphor coating to produce light upon actuation of the switch, and at least one photo detector arranged to receive the light and generate the electrical power. In accordance with still another aspect of the present invention, the energy harvesting device includes at least one photo detector arranged to receive the light from a lamp. Preferably, the lamp can be arranged to generate black light.

To further lower manufacturing costs, a preferred embodiment of the present invention utilizes MEMS technology to integrate the switch components onto a single chip. More specifically, MEMS (Micro ElectroMechanical [Systems] Silicon) is an emerging technology in which mechanical structures and electronic circuits are formed on silicon wafers. One example of a vehicle component that utilizes this approach is an air bag/collision detection sensor. MEMS can be used to form other electronic components such as switches, navigational compasses, relays, and RF transmitters. For example, this manufacturing concept will enable a wireless vehicle side mirror power switch assembly to be integrated on a single silicon chip. The switch would communicate wirelessly with the door mounted outside mirrors, and would have complete freedom of location on the door panel because no wiring harness would be required. The use of MEMS technology would reduce complexity, improve

reliability and reduce cost while providing more packaging flexibility. The self-powered wireless switch of the present invention can be used in other areas of the vehicle, including doors, instrument panel and headliner. Multiple switches can be put on a single chip and coupled to one transmitter circuit. An analog indicator, processor or other arrangement can be included to provide individual coding of each switch.

In operation, a user actuated switch 310 is connected to a control input of wireless transmitter 206. A voltage regulator (not shown) can be included to regulate the supply of power [form] from the photo detectors.